

CLAIMS

1. A signal transmitting cable comprising a first signal transmitting portion including a plurality of elongate, flexible first signal transmitting members, wherein the first signal transmitting members are surrounded by a first layer such that only the outermost signal transmitting members are in contact with said first layer, and said first signal transmitting members are arranged to form a plurality of rows, wherein a plurality of said rows contain a plurality of said members arranged such that neighbouring members of a row are in touching contact with each other, and such that a plurality of recesses formed by neighbouring members of a first row accommodate respective members of a second row.
2. A cable according to claim 1, wherein the first signal transmitting portion includes 12 said first signal transmitting members arranged in 4 rows having 2, 3, 4 and 3 fibres respectively.
3. A cable according to claim 1, wherein the first signal transmitting portion includes 18 said first signal transmitting members arranged in 5 rows having 2, 4, 5, 4 and 3 fibres respectively.
4. A cable according to claim 1, wherein the first signal transmitting portion includes 24 said first signal transmitting members arranged in 5 rows having 4, 5, 6, 5 and 4 fibres respectively.
5. A cable according to any one of the preceding claims, wherein said first layer is formed of resin material cured by means of ultraviolet radiation.
6. A cable according to any one of the preceding claims, further comprising a second signal transmitting portion comprising a plurality of elongate, flexible second signal

transmitting members arranged around the periphery of said first layer, wherein said external dimensions of said first layer are arranged such that each said second signal transmitting member is in touching contact with two adjacent said second signal transmitting members.

7. A cable according to claim 6, further comprising a third signal transmitting portion comprising a plurality of elongate, flexible third signal transmitting members arranged outwardly of said second signal transmitting portion.

8. A cable according to claim 6 or 7, wherein said second signal transmitting members are embedded in a second layer.

9. A cable according to any one of the preceding claims, wherein said first signal transmitting members are embedded in said first layer.

10. A signal transmitting cable comprising:-

a first signal transmitting portion including at least one elongate, flexible first signal transmitting member encapsulated in a first layer having predetermined external dimensions; and

a second signal transmitting portion comprising a plurality of elongate, flexible second signal transmitting members arranged around the periphery of said first layer, wherein said external dimensions of said first layer are arranged such that each said second signal transmitting member is in touching contact with two adjacent said second signal transmitting members.

11. A cable according to claim 10, further comprising a third signal transmitting portion comprising a plurality of elongate, flexible third signal transmitting members arranged outwardly of said second signal transmitting portion.

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12. A cable according to claim 10 or 11, wherein said second signal transmitting members are embedded in a second layer.

13. A cable according to any one of claims 10 to 12, comprising a plurality of said first signal transmitting members surrounded by a first layer such that only the outermost signal transmitting members are in contact with said first layer, wherein said first signal transmitting members are arranged to form a plurality of rows, and a plurality of said rows contain a plurality of said members arranged such that neighbouring members of a row are in touching contact with each other, and such that a plurality of recesses formed by neighbouring members of a first row accommodate respective members of a second row.

14. A cable according to claim 13, wherein said first signal transmitting members are embedded in said first layer.

15. A cable according to claim 13 or 14, wherein the first signal transmitting portion includes 12 said first signal transmitting members arranged in 4 rows having 2, 3, 4 and 3 fibres respectively.

16. A cable according to claim 13 or 14, wherein the first signal transmitting portion includes 18 said first signal transmitting members arranged in 5 rows having 2, 4, 5, 4 and 3 fibres respectively.

17. A cable according to claim 13 or 14, wherein the first signal transmitting portion includes 24 said first signal transmitting members arranged in 5 rows having 4, 5, 6, 5 and 4 fibres respectively.

18. A cable according to any one of claims 10 to 17, wherein said first layer is formed of resin material cured by means of ultraviolet radiation.

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19. A cable according to any one of the preceding claims, wherein an outer surface of the cable is modified to facilitate installation into a duct by means of fluid flow.

20. A cable according to claim 19, wherein said outer surface is provided with ribs.

21. A cable according to claim 19 or 20, wherein said outer surface includes at least one anti-static material.

22. A cable according to any one of claims 19 to 21, wherein said outer surface includes at least one friction reducing material.

23. A cable according to any one of the preceding claims, further comprising an outermost layer having an inner periphery longer than the outer periphery of the layer adjacent thereto to enable removal of said outermost layer from the cable.

24. A signal transmitting cable substantially as hereinbefore described with reference to the accompanying drawings.

25. A method of forming a signal transmitting cable, the method comprising:-

encapsulating at least one elongate, flexible first signal transmitting member in a first layer of curable material having predetermined external dimensions;

curing said first layer;

arranging a plurality of elongate, flexible second signal transmitting members around the periphery of said first layer such that each said second signal transmitting member is in

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touching contact with two adjacent said second signal transmitting members; and

fixing said second signal transmitting members in position relative to said first layer.

26. A method according to claim 25, wherein the step of fixing said second signal transmitting members in position relative to said first layer comprises embedding said second signal transmitting members in a second layer.

27. A method of forming a signal transmitting cable, the method substantially as hereinbefore described with reference to the accompanying drawings.